

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TORU MURATA

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Appeal 2007-3469  
Application 09/933,017  
Technology Center 2600

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Decided: November 19, 2007

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Before ANITA PELLMAN GROSS, JEAN R. HOMERE, and  
JOHN A. JEFFERY, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 through 12. Claims 15 through 21 and 23 through 26 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b) to decide this appeal.<sup>1</sup> We affirm.

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<sup>1</sup> An Oral Hearing was held on this appeal on November 8, 2007.

### The Invention

Appellant invented an electronic presentation system that uses an Ethernet communication cable to transmit both video and control signals between a remote-controlled projector located in a meeting room and a personal computer (PC) located in an office. The electronic presentation system allows the projector to display on a screen an enlarged replica of an image currently displayed on the personal computer. (Spec. 4.)

An understanding of the invention can be derived from exemplary independent claim 1, which reads as follows:

1. An electronic presentation system comprising:

Ethernet communication means;

a first image and voice display means connected to said Ethernet communication means in which display control and communication control through said Ethernet communication means are controlled by remote control means; and

a personal computer provided with a second image and voice display means connected to said Ethernet communication means and different from said first image and voice display means placed in a position different from the position placing said first image and voice display means, and input means;

wherein said remote control means captures display contents displayed by said personal computer on said second image and voice display means to display said captured display contents on said first image and voice display means at the same time, and

wherein said Ethernet communication means is used to transfer said display contents, said display control and said communication control.

In rejecting the claims on appeal, the Examiner relies upon the following prior art:

Miyashita	US 5,782,548	Jul. 21, 1998
Yasukawa	US 6,437,786 B1	Aug. 20, 2002

The Examiner rejects the claims on appeal as follows:

Claims 1 through 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Miyashita and Yasukawa.

First, Appellant contends<sup>2</sup> that the combination of Miyashita and Yasukawa does not render claims 1 through 12 unpatentable. Particularly, Appellant contends that the cited references do not teach or suggest an Ethernet communication means used for transferring display contents, display control and communication control. (App. Br. 11.) Appellant further contends that one of ordinary skill in the art would not be motivated to combine the cited references since the suggested combination would destroy the manner of operation of Miyashita. (Reply Br. 6.) In response, the Examiner contends that Miyashita's disclosure of an image projection system in combination with Yasukawa's teaching of using an Ethernet line

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<sup>2</sup> This decision considers only those arguments that Appellant submitted in the Appeal Brief. Arguments that Appellant could have made but chose not to make in the Brief are deemed to have been waived. *See* 37 C.F.R. § 41.37(c)(1) (vii)(eff. Sept. 13, 2004). *See also In re Watts*, 354 F.3d 1362, 1368 (Fed. Cir. 2004).

to transmit both image contents and control information teaches the invention. (Answer 14-16.) Additionally, the Examiner contends that the ordinarily skilled artisan would have been motivated to combine the teachings of Miyashita and Yasukawa to enhance the data transfer speed and to reduce cabling. (Answer 15.)

#### ISSUE

The *pivotal* issue in the appeal before us is as follows: Has Appellant shown<sup>3</sup> that the Examiner failed to establish that the combined disclosures of Miyashita and Yasukawa render the claimed invention unpatentable under 35 U.S.C. § 103(a)? Particularly, does Miyashita's disclosure of an image projection system in combination with Yasukawa's disclosure of using an Ethernet cable to transfer both image contents and control information render the claimed invention unpatentable?

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<sup>3</sup> In the examination of a patent application, the Examiner bears the initial burden of showing a *prima facie* case of unpatentability. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). When that burden is met, the burden then shifts to the applicant to rebut. *Id.*; *see also In re Harris*, 409 F.3d 1339, 1343-44 (Fed. Cir. 2005) (finding rebuttal evidence unpersuasive). If the applicant produces rebuttal evidence of adequate weight, the *prima facie* case of unpatentability is dissipated. *Piasecki*, 745 F.2d at 1472. Thereafter, patentability is determined in view of the entire record. *Id.* However, Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

## FINDINGS OF FACT

The following findings of fact are supported by a preponderance of the evidence.

### The Invention

1. Appellant invented an image projection system (Figure 1) including a remote-controlled projector (3) connected to a PC (2) via an Ethernet communication line (4). (Spec. 5.)

2. As depicted in Figure 1, upon receiving an infrared signal from the remote control transmitter (37), the Ethernet communication line (4) is used to simultaneously transfer both remote control data packets and image data packets between the PC (2) and the projector (3). (*Id.* 6-7.)

### The Prior Art Relied Upon

3. As shown in Figure 4, Miyashita discloses a remote-controlled image projection system for projecting an image in a PC (40) in a first location to a screen (16) in a second location using a projector (10). (Col. 8, ll. 1-14.)

4. Miyashita discloses that, upon receiving a command from the remote controller (20), digital data is transmitted between the projector (10) and the PC (40) via a serial transmission line (RS-232C) (50). The transmitted digital signals include control information to adjust the sound volume, to brighten the picture, as well as to advance and reverse each page. (Col. 8, ll. 2-22, col. 9, ll. 52-60.)<sup>4</sup> The digital signals also include operation

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<sup>4</sup> Miyashita discloses transferring control data emitted from the remote control to the PC via the RS232C line such that control functions can be

signals transmitted wirelessly from the remote controller (20) from the projector to the PC. (Col. 9, ll. 22-26.)

5. As shown in Figure 6, Miyashita further discloses a separate input for transmitting video signals received from the PC (or a video deck/video camera/video disk player) to the projector. (Col. 7, ll. 1-12.)

6. As depicted in Figure 3, Yasukawa discloses a network projector system wherein a projector (31) is connected to a server (32) via Ethernet cable (33). The projector includes a bus (13) for transferring image data and control signals obtained from the PC via the Ethernet cable.<sup>5</sup> (Col. 9, ll. 23-55; col. 10, ll. 13-50; col. 11, ll. 11-33.)

## PRINCIPLES OF LAW OBVIOUSNESS

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the

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performed without interrupting the presentation. (Col. 8, ll. 20-22.)

<sup>5</sup> Transferred data includes image data and image controlling data exchanged between a specified server and the projector. (Col. 2, ll. 57-60.)

prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248 [(1850)].” *KSR*, 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (emphasis added)), and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at 1740. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

The Supreme Court stated that there are “[t]hree cases decided after *Graham* [that] illustrate this doctrine.” *Id.* at 1739. “In *United States v. Adams*, ... [t]he Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *Id.* at 1740. “*Sakraida and Anderson’s-Black Rock* are illustrative – a court must ask whether the improvement is more than the predictable use of prior art elements according to their established function.” *Id.* at 1740.

The Supreme Court stated that:

Following these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement.

*Id.* The Court explained,

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.



*Id.* at 1740-41. The Court noted that “[t]o facilitate review, this analysis should be made explicit.” *Id.*, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). However, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*

The Federal Circuit recently concluded that it would have been obvious to combine (1) a mechanical device for actuating a phonograph to play back sounds associated with a letter in a word on a puzzle piece with (2) an electronic, processor-driven device capable of playing the sound associated with a first letter of a word in a book. *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (“[a]ccommodating a prior art mechanical device that accomplishes [a desired] goal to modern electronics would have been reasonably obvious to one of ordinary skill in designing children’s learning devices”). In reaching that conclusion, the Federal Circuit recognized that “[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not.” *Id.* at 1161 (citing *KSR*, 127 S. Ct. 1727, 1739 (2007)) (“The combination of familiar elements according to known

methods is likely to be obvious when it does no more than yield predictable results.”). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was “uniquely challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.” *Id.* at 1162 (citing *KSR*, 127 S. Ct. at 1740-41 (2007)).

#### ANALYSIS

We begin our analysis by noting that independent claims 1 and 7 recite an Ethernet communication means for transferring (1) display contents, (2) display control, and (3) communication control. (App. Br., Claim Appendix.) We find that the combined disclosures of Miyashita and Yasukawa reasonably teach this limitation.

As detailed in the Findings of Fact section above, we have found that Miyashita, similarly to the claimed invention, discloses an image projection system having a remote controlled projector that transmits image and communication control data to the PC via a communication line. (Findings 3 and 4.) We have also found that Miyashita discloses a separate input for transferring image contents data between the PC and the projector. (Finding 5.) Additionally, we have found that Yasukawa discloses an Ethernet line for transferring both image contents and control data between a computer and a projector. (Finding 6.) Therefore, we find that one of ordinary skill would have readily recognized that Miyashita’s apparatus, taken in combination with Yasukawa’s disclosure, would have *predictably* resulted

in a remote-controlled image projection system that uses a single Ethernet line as the primary medium for transmitting image content, image control, and communication control data between a projector and a PC.<sup>6</sup> We agree with the Examiner that the ordinarily skilled artisan would have recognized that a particular benefit resulting from this proffered combination is that the amount of cables needed for the ensuing system to function would *predictably* be reduced.

Appellant's argument that such reduction in cabling teaches away from Miyashita's system is not persuasive.<sup>7</sup> As set forth in the Findings of Fact section above, we have found that the Miyashita patent is primarily concerned with allowing users to remotely control data transmitted between the PC and the projector without interrupting the presentation.<sup>8</sup> As noted

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<sup>6</sup> [I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). The Supreme Court has held that in analyzing the obviousness of combining elements, a court need not find specific teachings, but rather may consider "the background knowledge possessed by a person having ordinary skill in the art" and "the inferences and creative steps that a person of ordinary skill in the art would employ." *See KSR Int'l*, at 1740-41. To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

<sup>7</sup> Appellant alleges that in Miyashita, using more cables is beneficial and more suitable since it provides increased functionality for the projector, such as additional display possibilities. Further, Miyashita uses dual lines to allow the control of data while the presentation is ongoing. (Reply Br. 6.)

<sup>8</sup> See *supra* note 3.

above, the proffered combination of Miyashita and Yasukawa would provide the benefit of using a single Ethernet line to transmit both image data and control data. We further note that the resulting Miyasawa-Yasukawa system would still be able to remotely control data transmitted between the PC and the computer without interrupting the presentation. Additionally, we note that the resulting system would further be able to transmit image control, image content, and transmission control data via the single Ethernet cable while preserving the other video input(s) for additional display possibilities. It follows that the Examiner did not err in rejecting independent claims 1 and 7 as being unpatentable over the combination of Miyashita and Yasukawa.

Appellant did not provide separate arguments with respect to the rejection of claims 2 through 6 and 8 through 12. Therefore, we select independent claim 1 as being representative of the cited claims. Claims 2 through 12 consequently fall together with representative claim 1. *See In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii).

### CONCLUSION OF LAW

On the record before us, Appellant has not shown that the Examiner failed to establish that the combined disclosures of Miyashita and Yasukwa render claims 1 through 12 unpatentable under 35 U.S.C. § 103(a).

### DECISION

We have affirmed the Examiner's decision rejecting claims 1 through 12.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

### AFFIRMED

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